Covariates of first marriage dissolution: derived from Austrian FFS

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Covariates of First Marriage Dissolution derived from the Austrian FFS

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I. Introduction

The increase in divorce rates in most industrialized countries over the past decades and the growing concern about negative consequences of divorce of parents on the children affected, led to a marked upswing in the interest in the sociodemographic determinants of divorce.

With increasing numbers of couples beginning to live together in the form of non-marital unions many recent studies have focused on the effects of premarital cohabitation on the divorce risk of a subsequent union. A recent study on cohabitation and divorce in Canada (see D.R. Hall and J.Z. Zhao, 1995) has found that premarital cohabitation is associated with a greater risk of divorce even after the effects of sociodemographic factors that differentiate cohabitors were specified in a model of marital dissolution. On the other hand, using the 1987-88 National Survey of Families and Households (NSFH) Cohen (1991) has shown that differences between cohabitors and noncohabitors in the incidence of marriage dissolution are minimal when using age at first union to explain subsequent marital stability. The same dataset has been used by Rao and DeMaris (1989) to assess the risk of marriage dissolution using proportional hazards vs logistic regression approaches. Related to the impact of age at marriage and timing of first birth on marriage dissolution in Canada, Desrosiers and Le Bourdais (1991) have shown that timing of first marriage still exerts a strong net influence on the propensity of women to experience marital breakdown. Taking into account age at marriage, women who conceive their first child within marriage appear significantly less likely to experience a separation regardless of timing of birth. A hazard model analysis of the covariates of marriage dissolution in Canada is presented in Balakrishnan et al. (1987). The authors found that age at marriage, year of marriage, cohabitation before marriage, a premarital birth or conception, urban-rural place of residence, and religiosity are all significantly correlated with marriage dissolution, while religion and education do not seem to affect the marriage dissolution probabilities when other factors are controlled. An extensive study of models and explanations of marriage dissolution in Australia has been presented by Bracher et al. (1993). Year of birth, and age at marriage provided the most parsimonious characterization of the temporal correlates of marriage dissolution. Moreover, the authors have shown that the most potent predictors of marriage dissolution are the patterns of employment, home-ownership, and region of residence, that is characteristics of the unfolding marriage itself. Extensive studies on the disruption of marital and non-marital unions have also been performed in Sweden (see e.g. B. and J.M. Hoem 1992 and Andersson 1996). The results evidence that also in Sweden consensual unions have much higher dissolution risks than

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marriages, unions with children have lower dissolution risks than comparable unions, etc. A comparison of marriage disruption in Sweden, West Germany and Italy is presented in Blossfeld et al. (1995).

The main methodological question in the study of the risk of a divorce concerns the choice of the time-variant indexing variable (age, duration of marriage, age of youngest child, etc.) and the implications of the increasing prevalence of non-marital unions on divorce analysis. For the demographic analysis of fertility and especially mortality, age has become the unchallenged demographic dimension (in addition to sex) along which demographic intensities are being measured, summarized and described. There are good reasons for this practice because age seems to be the most important source of heterogeneity and systematic variation. For divorce a primary demographic dimension of analysis is not as obvious because there are several candidates. Usually, marital duration is chosen as the basic indexing variable. But there are some problems with marital duration both conceptually and empirically. Conceptually, the chosen variable should be the one that actually drives the process that governs the temporal variation of divorce risks. It is questionable, whether the time that a couple spent together since officially marrying actually corresponds to some psychologically determined standard pattern of changing divorce risks over time. This is the more problematic, since a rapidly increasing proportion of the population has very intensive relationships including cohabitation before officially getting married. Should it not be assumed that whatever duration-specific pattern of separation risks is being applied this starts at the beginning of the relationship or the time when cohabitation starts rather than the time of marriage. Empirically, studies that simultaneously considered the possible effects of duration, age at marriage and age at divorce (using APC-methodologies, see Lutz, Wils, and Nieminen 1991) suggested that age at divorce may be the more important covariate or even age of the youngest child.

The present paper will only be a first step in studying these issues using data from the Austrian FFS. It presents an exploratory bi-variate and multi-variate analysis of a number of covariates of divorce risks for which marital duration is still used as the indexing variable. As next steps we plan to define APC-type models with covariates that help to better assess the roles of duration, age, and age at marriage and finally extend the analysis to cross-national comparisons on the basis of other FFS data sets.

II. Data and Methods

The data for this analysis are derived from the Austrian Fertility and Family Survey (FFS), which was conducted between December 1995 and May 1996. In this survey biographies of 4581 women and 1539 men between age 20 to 54 have been collected; among other topics also partnership biographies. Partnerships are distinguished into marital and non-marital unions; unions are defined by a common household. This analysis restricts itself to first marriages, which in many, but not in all, cases are also first partnerships. First marriages are subdivided into two groups: (1) all marriages that were preceded by a consensual union among the same two partners and (2) those that immediately started with marriage. Each first married woman is then followed until the occurrence of divorce or until the date of interview, whichever comes first. Thus, in this paper divorce constitutes the event under consideration, that is duration since marriage formation is the time factor of our model. Altogether the FFS encompasses 3287 women, who ever experienced a first marriage. Out of this about 564 women (17 per cent) recorded a divorce of their first marriage prior to the date of the interview.

For all calculations our status variable is defined as follows:

status = 0 for all women that are still married at the date of the interview
status = 1 for all women that experienced a divorce prior to the date of the interview

and we are controlling for the impact of demographic and social indicators on the divorce risk by including the following covariates:

1. age at marriage with five groups: less than 19 years old, 20-23 years, 24-28 years, 29-35 years and more than 36 years old
2. duration of pre-marital consensual union with five groups: 0 years, 1 year, 2 years, 3 years and 4+ years
3. educational level at interview date with four groups: basic (up to 9 years of schooling), lower secondary (apprenticeship and between 10 and 12 years of schooling), upper secondary (12 years of schooling), tertiary (13+ years of schooling)
4. divorce of parents with two levels: yes and no
5. residence at time of divorce with three levels: predominantly rural, towns, large cities
6. presence of at least one pre-marital child
7. birth cohort with four groups: less than 1949, 1950-1959, 1960-1969, 1970+

Furthermore, divorce risks are analyzed according to the variables

1. period of divorce with two groups: before 1986, and 1986-1995
2. marriage cohort with three groups: married before 1975, 1975-1986, 1987+
3. parity at date of divorce with four groups: no child, 1 child, 2 children, 3 and more children

The choice of the above-defined variables allows to investigate possible period effects, cohort effects, and parity effects on our covariates. In contrast to treating these three variables as additional covariates, this model design allows us to better study the interactions between them and the other covariates.

The structure of our data set with respect to the covariates we are controlling is summarized in Table 1. For example, while all first marriages at age less than 20 years constitute only 26 per cent of our sample, this group represents 44 per cent of all first divorces.

To quantify and explain the underlying forces of the relative divorce risk of first marriages, we estimate bi- and multi-variate hazard models[4] in the next sections. In a first step, we will present survival functions for first marriages based on simple life-table techniques for each of our covariates. In a second step, we estimate Cox proportional hazard models with time constant covariates, after having tested the assumption on proportionality (see Blossfeld and Rohwer, 1995). We chose Cox proportional hazard models, since (1) it turned out that, indeed, hazards for the sub-populations under study are proportional, and (2) we do not have a clear understanding of the form of the baseline hazard.

[4] All estimates have been obtained by applying the statistical progam package SPSS.

Table 1: Number of first marriages and divorces of first marriages by demographic and social characteristics at the time of first marriage (time-invariant variables) or at the end of the respective episode (time-dependent variable).

Characteristic		all first marriages		all first divorces	
		number	%	number	%
Marriage cohort	-1974	1150	35	239	42
	1975-86	1195	36	237	42
	1987+	942	29	88	16
		3287	*100*	*564*	*100*
Age at marriage	20-23	1467	45	216	38
	-19	848	26	250	44
	24-28	747	23	75	13
	29-35	199	6	22	4
	36+	26	1	1	0
		3287	*100*	*564*	*100*
Parity*	0	2892	88	205	36
	1	2549	78	94	17
	2	2167	66	187	33
	3+	756	23	78	13
				564	*100*
Years in	0	1687	51	296	52
consensual union	1	496	15	101	18
prior to marriage	2	350	11	71	13
	3	254	8	35	6
	4	435	13	53	9
		3222	*98*	*556*	*99*
Pre-marital child	no	2512	76	430	76
	yes	775	24	134	24
		3287	*100*	*564*	*100*
Education	basic	884	27	177	31
	lower secondary	1811	55	296	52
	upper secondary	414	13	60	11
	tertiary	175	5	30	5
		3284	*100*	*563*	*100*
Divorce of	yes	353	11	95	17
parents	no	2910	89	464	82
		3263	*99*	*559*	*99*
Urban/rural	rural	759	23	216	38
residence	towns	1377	42	207	37
	large cities	1120	34	123	22
		3256	99	546	97
Period*	-1985	2346	71	272	48
	1986-1995	3020	92	292	52
				564	100
Birth cohort	-1949	854	26	151	27
	1950-1959	1086	33	228	40
	1960-1969	1147	35	165	29
	1970+	200	6	20	4
		3287	100	564	100

Remark: Wrong or missing observations imply that the single groups of the covariates do not sum up to 100 per cent.

* The time-dependent nature of the covariates parity and period implies that the numbers of the respective sub-groups do not sum up to the total number of first marriages.

III. Survival Functions for Different Groups of Couples

Figure 1 shows survival functions for first marriages by duration of marriage, compared to survival functions of all first partnerships and all never married consensual unions by duration of partnership. First marriages may overlap with first partnerships; first never married consensual unions are a sub-group of all first partnerships. Clearly, for all durations survival probabilities of first marriages are higher than of first partnerships. Among first partnerships, the survival function is lowest for those who had not been married until the interview date. Thus, marriages are comparably much more stable than consensual unions, especially never married consensual unions. For first marriages, dissolution rates increase in the first years until they peak with three years; for durations longer than three years, a generally decreasing trend in dissolution rates can be found. For all first partnerships dissolution rates are generally higher (up to a duration of ten years) than for first marriages. Furthermore, dissolution rates reach their maximum already after one year, and decrease from there on. This peak after one year mainly stems from never married first consensual unions: for this group the risk of divorce is lowest during the first year of the partnership, increases thereafter and remains on a high level for all further durations (Figure 2).

Figure 1: Survival functions of all first marriages, all first consensual unions, and all first never married consensual unions by duration of partnership, women.

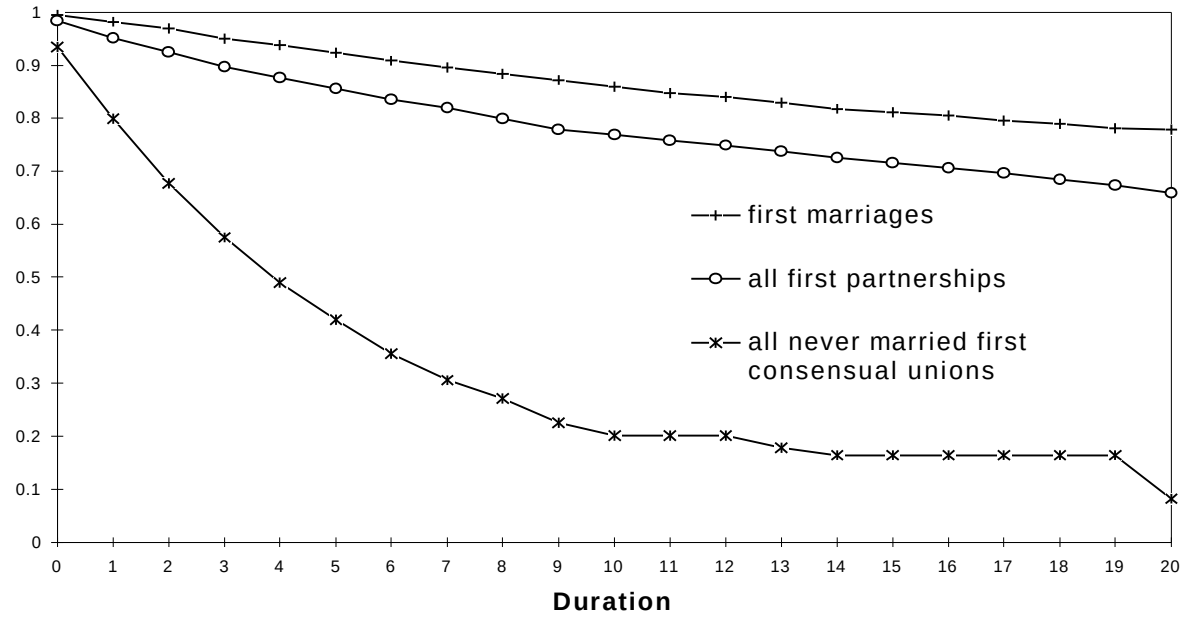
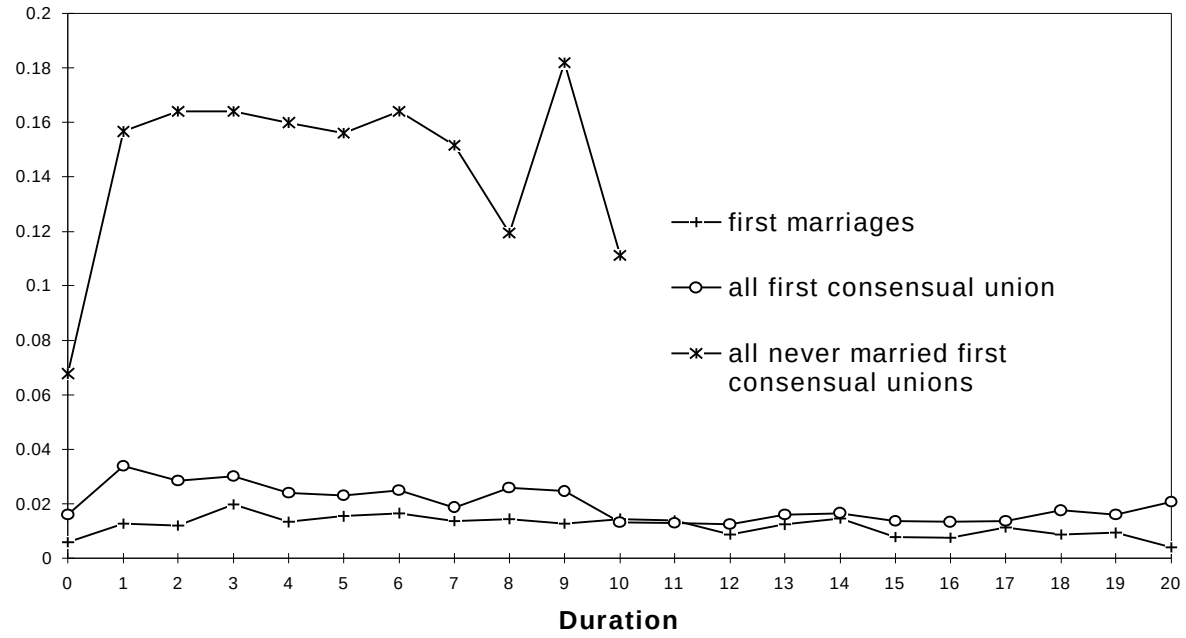
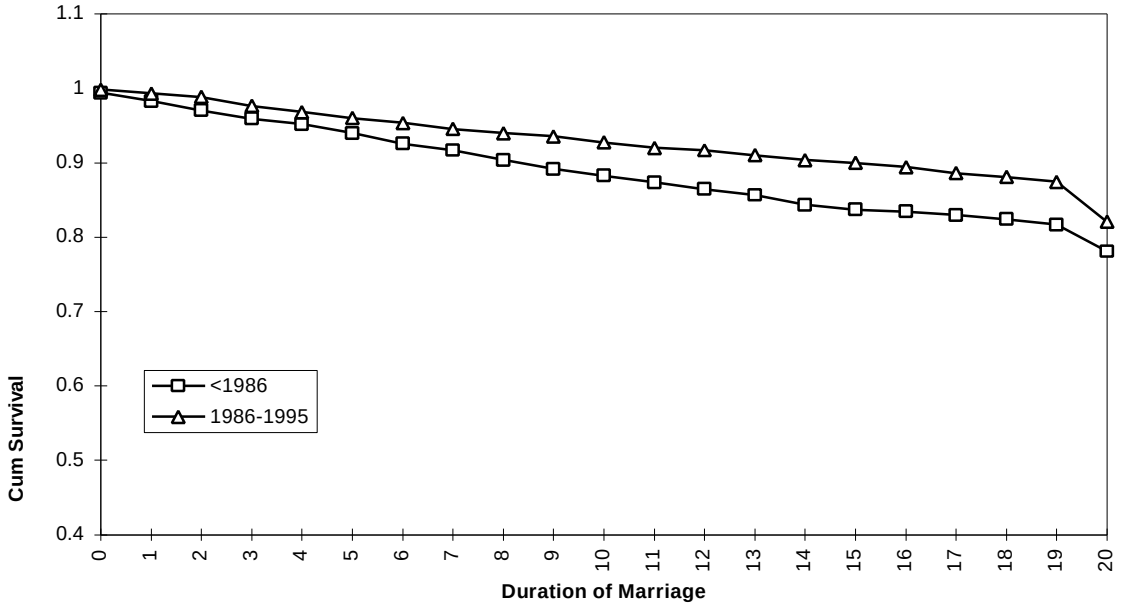


Figure 2: Hazard rates for all first marriages, all first consensual unions, and all first never married consensual unions by duration of partnership, women.



Survival functions for the two periods chosen reveal that, indeed, slight differences in divorce risks do exist (see Figure 3). However, the direction of the differences does not follow our expectations: divorce risk is slightly higher for the first period (<1986) and decreases in the second period (1986-1995). One explanation for this pattern may be an unprecedented marriage peak in 1986. This marriage peak was a result of the suspension of the official marriage grant which was given to all first married partners until the end of 1986. Other analysis in Austria has shown that the '1986 marriages' in general experience lower divorce risks than those marriages which were contracted in earlier or later periods.

Figure 3: Survival functions by period and duration of marriage, women.



Survival functions by birth and marriage cohorts (Figures 4 and 5) clearly show that from the fourth year of a marriage onwards younger cohorts do experience higher divorce risks than older cohorts. Up to the fourth year differences between cohorts are minor.

Figure 4: Survival functions by birth cohort and duration of marriage, women.

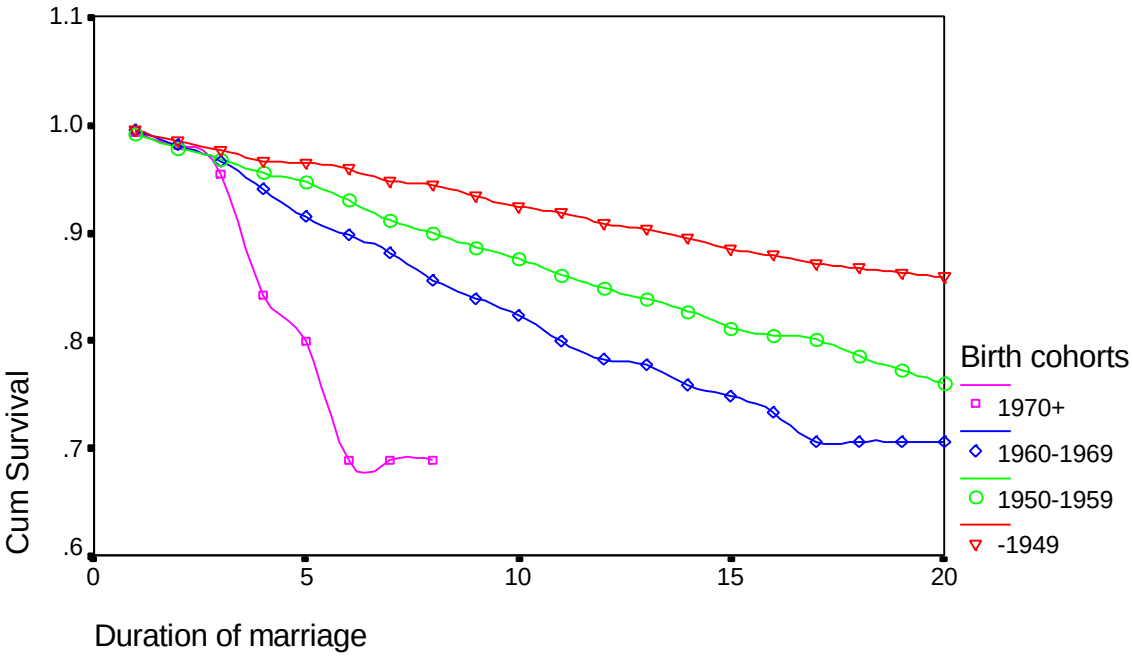
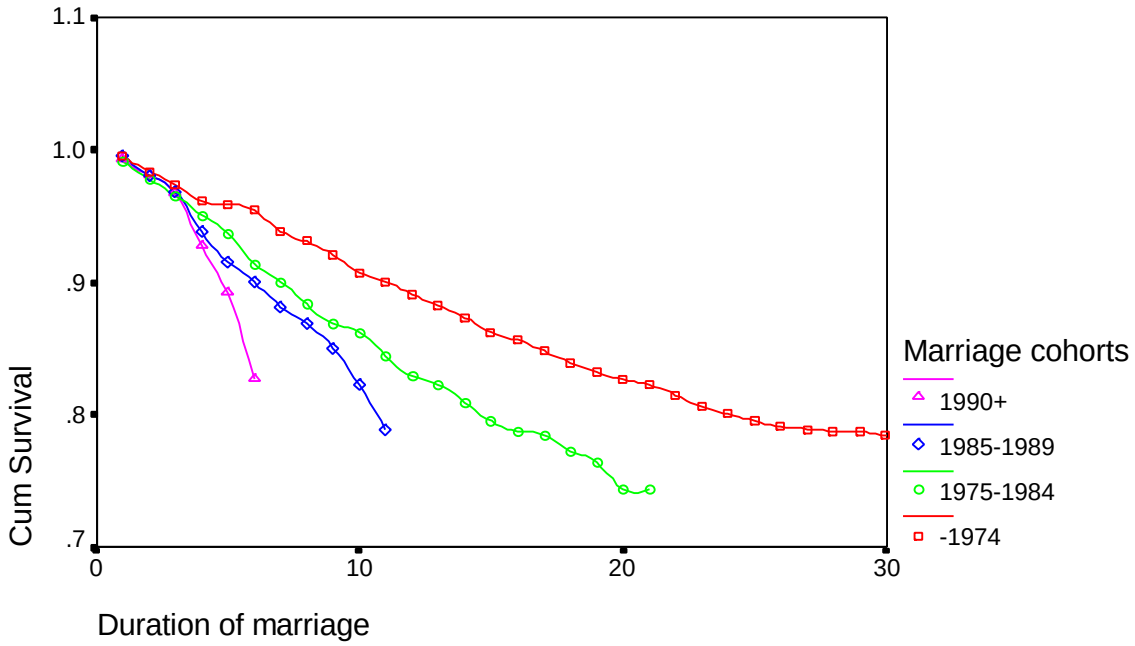


Figure 5: Survival functions by marriage cohorts and duration of marriage, women.



If first marriages are further broken down by whether they were preceded by a consensual union, a more differentiated picture can be found. For durations up to three years no large differences in survival probabilities between those who immediately started the partnership with marriage and those who first lived in a consensual union can be found. After a marriage duration of three years, those who had not been living together in a common household clearly experience lowest divorce risks, while those who had been living together prior to their marriage experience higher divorce risks (Figure 6). From survival probabilities it is not immediately clear, whether this pattern is caused by (1) a difference in cohort specific divorce risks - older cohorts usually started their partnership immediately with marriage while younger cohorts more and more tend to start their first partnerships as consensual unions - or (2) by the longer duration of marriages which started as consensual unions. If the latter is the main cause, the question arises whether duration of marriage is the correct 'clock' or if instead duration since beginning of a consensual union should be applied. Hazard rates for first marriages preceded by consensual unions and those which immediately started with marriage (Figure 7) reveal that up to the third year only small differences in divorce rates of the two groups can be found. From the third year on, divorce rates of first marriages which were preceded by a consensual union, start to be increased, while for durations longer than 13 years hazard rates of both groups become similar again.

Figure 6: Survival functions by years lived in consensual unions before marriage and duration of marriage, women.

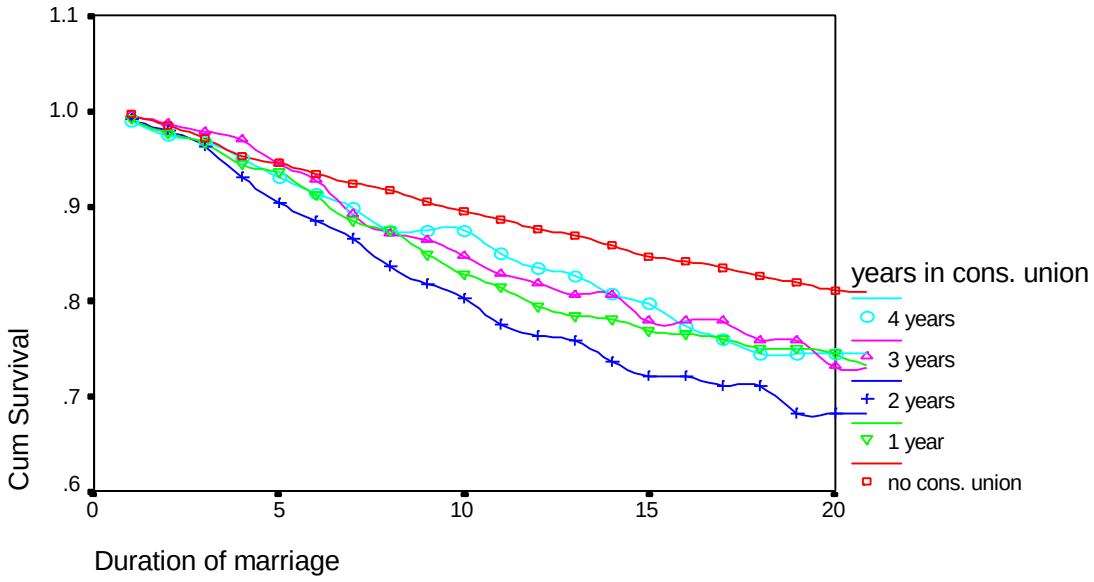
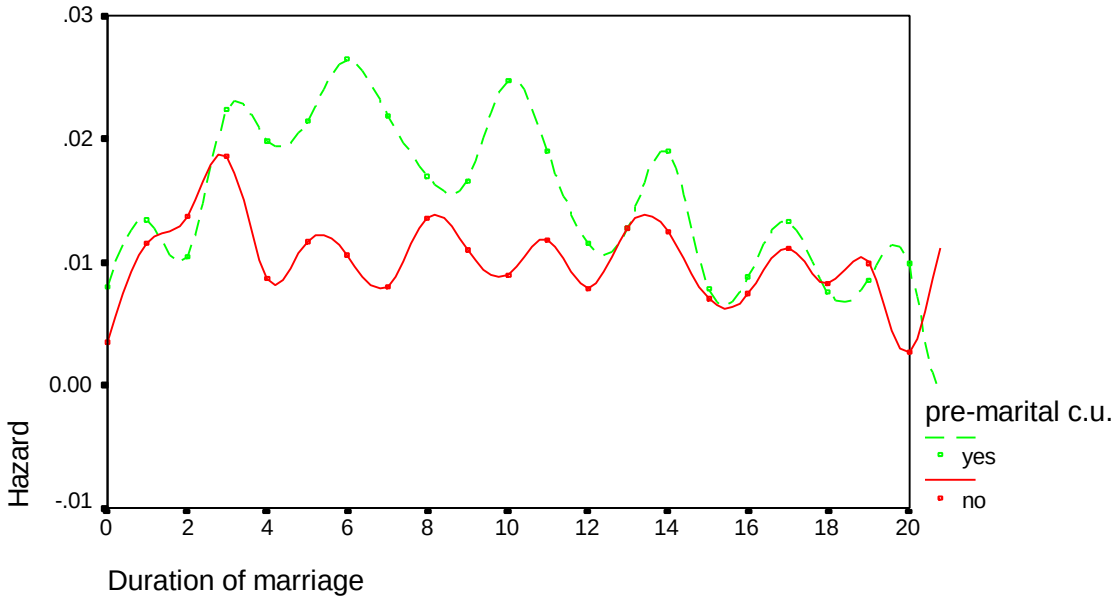
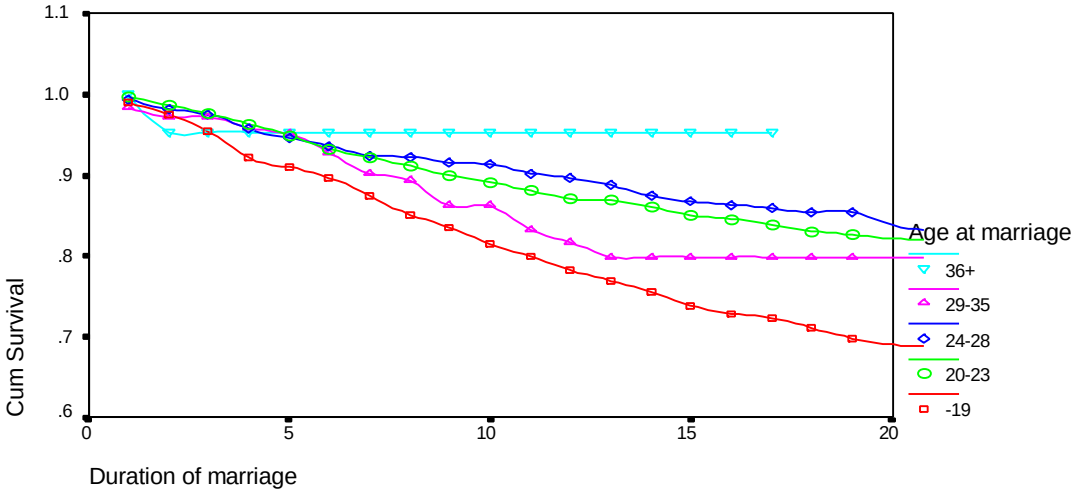


Figure 7: Hazard rate by years lived in consensual unions before marriage and duration of marriage, women.



Divorce rates may not only be affected by duration of partnership and cohort effects but also by age at marriage. In general, the assumption is that young marriage-age results in an increased divorce probability. Survival functions for age at marriage show that starting with duration three, those who had married up to age 19 experience highest divorce risks while divorce probability is lowest for marriage-age 24 to 28 and again increases for age 29 and above. For shorter marriage durations only little differences in divorce risks according to age at marriage can be found.

Figure 8: Survival functions by age at marriage and duration of marriage, women.



A number of studies (among them Andersson 1996) have shown that divorce risks heavily depend on the number of children in a marriage. In addition, also the presence of at least one pre-marital child has been found to significantly influence divorce risks of first marriages. In certain areas of Austria it has always been common to have children before marriage, also in earlier periods - in the FFS 24 per cent of all first marriages are found to have premarital children. Survival functions reveal that in the bi-variate analysis divorce risks of women with premarital children are similar to those who married without having children. On the other hand, considerable differences according to parity can be found. Divorce risks are highest for childless women and they are lowest for women with three and more children. Most interestingly, a notable decrease in the divorce risk can only be found from the second child onwards.

Figure 9: Survival functions by presence of at least one pre-marital child and duration of marriage, women.

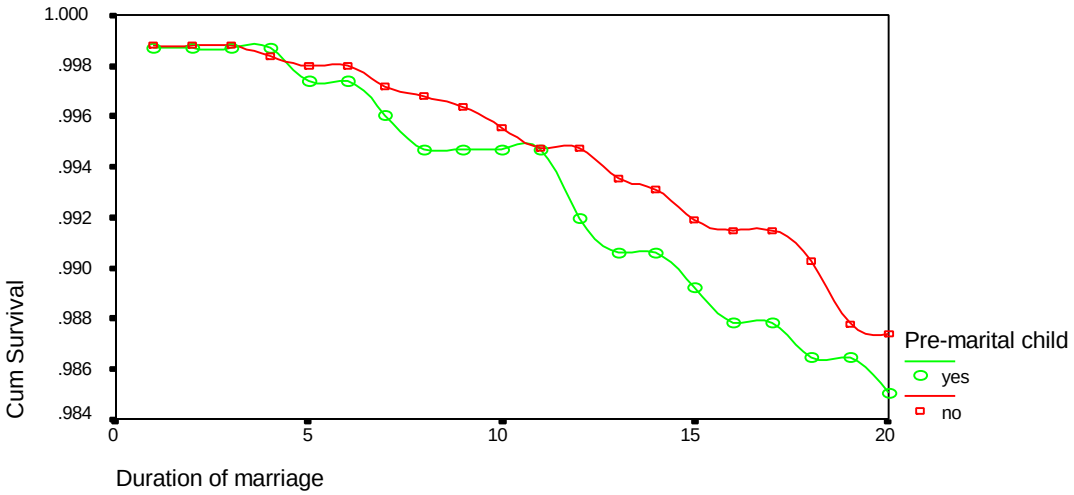
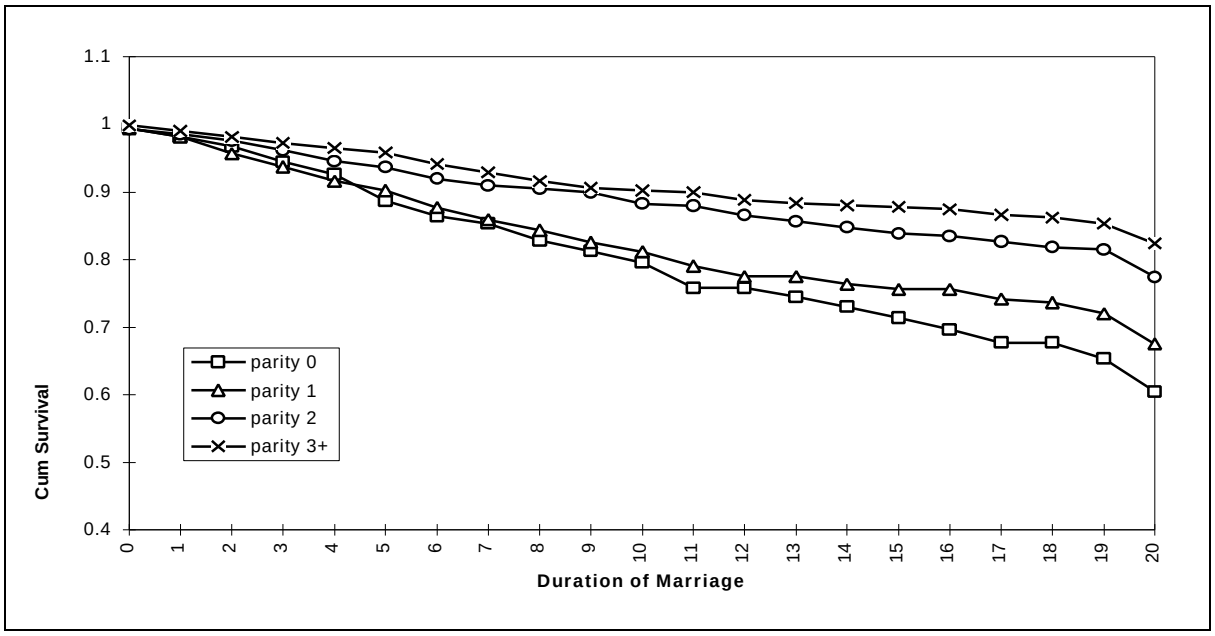


Figure 10: Survival functions by parity and duration of marriage, women.



Social characteristics also have a clear impact on survivorship of first marriages in the bi-variate analysis. For all marriage durations divorce probabilities are considerably lower in rural areas and in small and medium-sized towns than in large cities. Differences according to educational attainment level are not very pronounced, especially during the first ten years of marriage. In general divorce risk follows a U-shaped pattern: It is highest for basic educated women, lowest for upper secondary educated and increases again for tertiary educated women, especially for longer marriage durations. Survival functions for a third characteristic - whether a woman experienced the divorce of her parents - show that divorce probabilities of first married women whose parents are also divorced are indeed increased. To what extent these social characteristics measure the same underlying risk factor of divorce will be further analyzed in the next section, which presents results from multi-variate Cox-proportional hazard models.

Figure 11: Survival functions by place of residence at the time of divorce and duration of marriage, women.

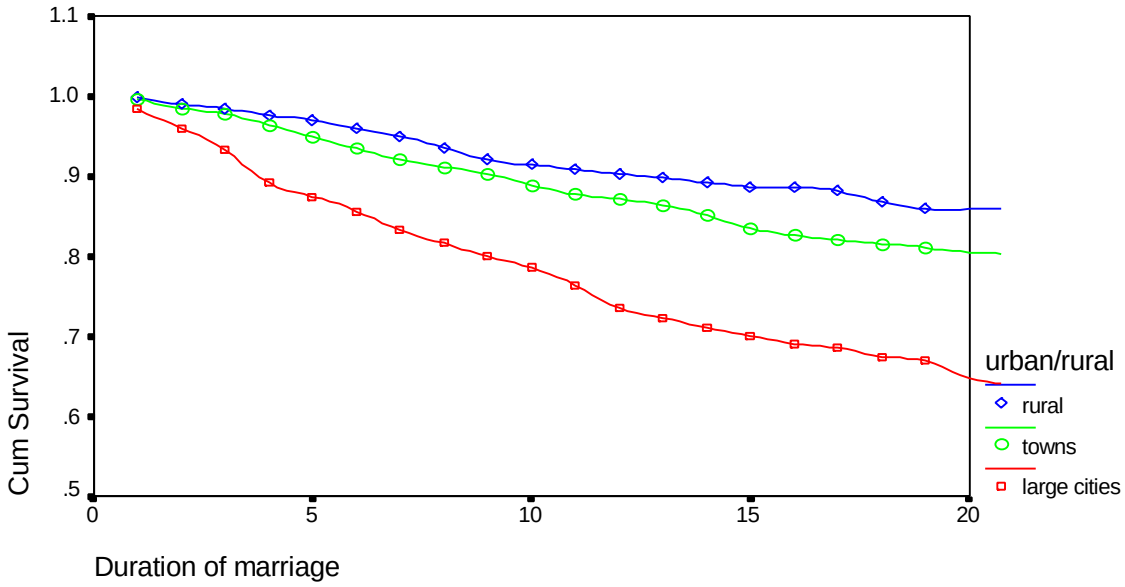


Figure 12: Survival functions for women whose parents are divorced or still married by duration of marriage.

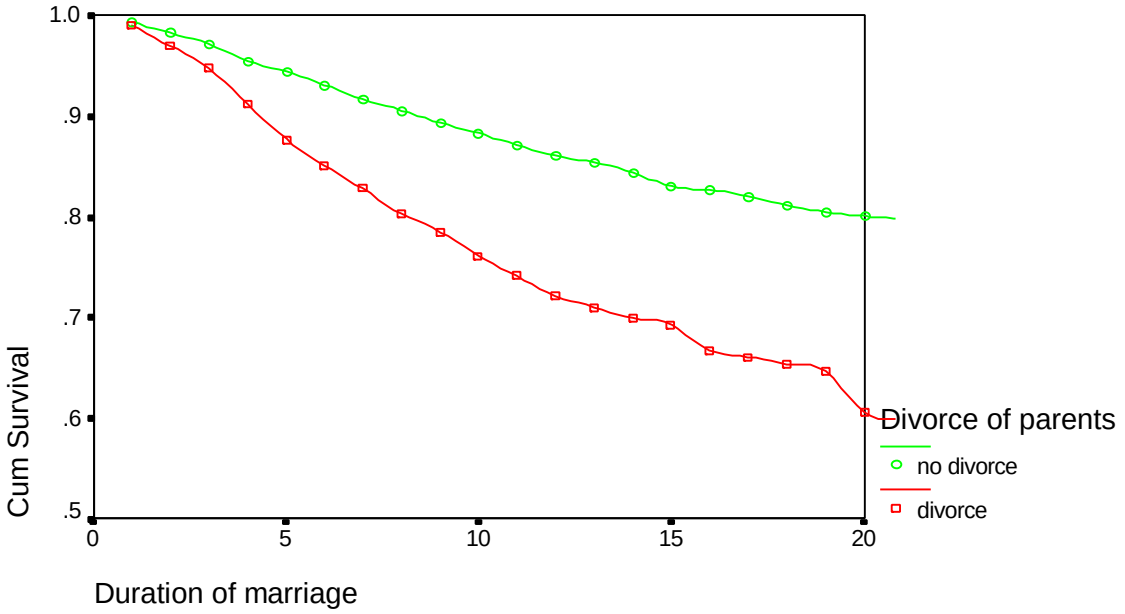
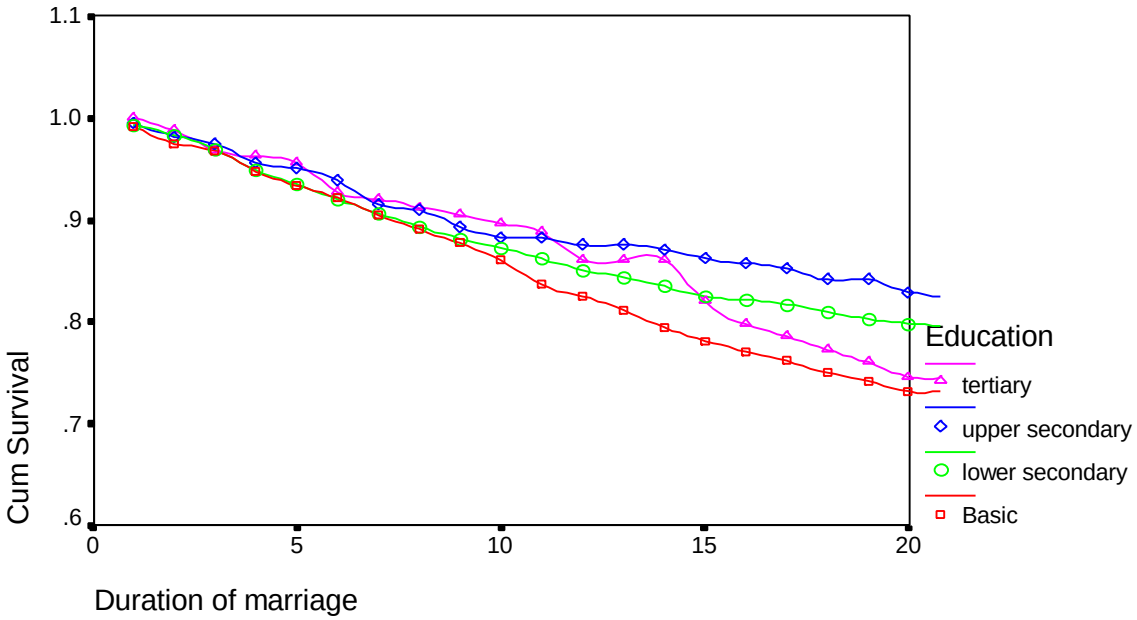


Figure 13: Survival functions for educational groups by duration of marriage, women.



IV. Bi-variate Cox Regressions

Table 2 summarizes the relative risks with respect to the different covariates chosen for two sub-periods (divorce before 1986 or from 1986 onwards) as well as for the whole period. Some of the covariates turn out to be remarkably significant. The most important is the birth cohort: the younger the woman, the higher her divorce rate. This effect holds for both sub-periods separately but is especially pronounced in the more recent one. This may also be taken as an indication of an age effect as discussed in the introduction; a more detailed analysis would be required for further in-depth study of this question.

Table 2: Relative risk of divorce based on bi-variate Cox-regression models, women

Covariate		**Relative Divorce Risks by periods**		
		<1986	**1986-1995**	**total**
Birth cohort	**-1949**	**1.00**	**1.00**	**1.00**
	1950-1959	1.83 *	5.03 *	1.70
	1960-1969	2.73 *		2.50 *
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**
	no	0.60 *	0.35 *	0.47 *
Education	tertiary	0.89	0.80	0.86
	upper secondary	0.65 **	0.72 **	0.69 *
	lower secondary	0.83	0.72 *	0.79 *
	basic	**1.00**	**1.00**	**1.00**
Marriage cohort	1987+			2.30 *
	1975-1986	1.57 *	8.51 *	1.53 *
	-1974	**1.00**	**1.00**	**1.00**
Age at marriage	29-35			1.20
	24-28			0.88
	20-23			**1.00**
	-19			1.88 *
Years in consensual union before marriage	4	1.36	2.33 *	1.28
	3	1.78 *	1.99 *	1.34
	2	1.63 *	3.29 *	1.85 *
	1	1.36 **	2.12 *	1.48 *
	0	**1.00**	**1.00**	**1.00**
Premarital child	1	1.11	1.12 **	1.07
	0	**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**
	towns	0.44 *	0.52 *	0.49 *
	rural	0.32 *	0.37 *	0.35 *

* significant at the 95 per cent level
** significant at the 90 per cent level

The question of whether the woman has experienced a divorce of her parents during her childhood also turns out to be very significant in the bi-variate setting. This is not surprising and has often been described. However, over time this effect seems to have become stronger. Education in a bi-variate perspective shows some sort of U-shaped pattern with the lowest

education group having the highest risks and the intermediate groups showing the lowest. Women with tertiary education again exhibit higher divorce risks. Over time this pattern seems to have weakened.

Marriage cohort again shows the very significant trend of increasing risks for the younger cohorts. As to age at marriage only those women who married below the age of 20 have consistently higher divorce risks. Above age 20 no significant pattern appears. It is remarkable, however, that those who married between 20 and 23 do seem to have higher risks only in older marriage cohorts but not in the younger ones. Those who had lived in a non-marital union before marrying do have higher risks than those who directly married. As to the length of the pre-marital union one to two years seem to be more risky than 3-4. A premarital child seems to be a minor risk factor which is significant only in the second period. Finally the difference by place of residence is very pronounced and consistent. Women in large cities do have by far the highest divorce risks whereas those in rural areas clearly have the lowest ones in all periods.

Table 3: Relative risk of divorce based on bi-variate Cox-regression models, women.

Covariate		Relative Divorce Risks by marriage cohorts		
		< 1974	**1975-1986**	**1987+**
Birth cohort	**-1949**	**1.00**	**1.00**	
	1950-1959	1.65 *	1.57	
	1960-1969		2.35 *	
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**
	no	0.54 *	0.39 *	0.49 *
Education	tertiary	0.83	0.73	1.04
	upper secondary	0.69 **	0.66 *	1.00
	lower secondary	0.80 **	0.78 **	1.01
	basic	**1.00**	**1.00**	**1.00**
Age at marriage	29-35	0.92	1.01	0.75
	24-28	1.15	0.65 *	0.78
	20-23	**1.00**	**1.00**	**1.00**
	-19	2.26 *	1.56 *	1.88 *
Years in consensual union before marriage	4	1.20	1.04	0.76
	3	2.31 *	1.14	0.61
	2	1.80 *	1.54 *	0.86
	1	1.06	1.59 *	1.23
	0	**1.00**	**1.00**	**1.00**
Premarital child	1	1.08	1.04	1.01
	0	**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**
	towns	0.46 *	0.46*	0.61 *
	rural	0.39 *	0.29*	0.35 *

* significant at the 95 per cent level

** significant at the 90 per cent level

Table 4: Relative risk of divorce based on bi-variate Cox-regression models, women.

Covariate		Relative Divorce Risks by parity			
		parity 0	**parity 1**	**parity 2**	**parity 3+**
Birth cohort	**-1949**	**1.00**	**1.00**	**1.00**	**1.00**
	1950-1959	0.99	2.02 *	1.54 *	2.51 *
	1960-1969	1.70 *	3.11 *	2.28 *	5.23 *
	1970+	2.09	7.18 *	8.35 *	
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**	**1.00**
	no	0.46 *	0.53 *	0.44 *	0.42 *
Education	tertiary	0.77	0.68	1.01	0.83
	upper secondary	0.94	0.82	0.64 **	0.56
	lower secondary	1.20	0.79 *	0.83	0.59 *
	basic	**1.00**	**1.00**	**1.00**	**1.00**
Marriage cohort	1987+	1.91 *	2.40 *	2.57 *	4.17 *
	1975-1986	1.24	1.69 *	1.35 **	2.51 *
	-1974	**1.00**	**1.00**	**1.00**	**1.00**
Age at marriage	29-35	1.20 *	0.92	1.16	1.92
	24-28	1.15	1.01	0.70 **	0.81
	20-23	**1.00**	**1.00**	**1.00**	**1.00**
	-19	2.02 *	1.80 *	1.65 *	1.69 *
Years in consensual union before marriage	4	1.22	1.06	1.30	2.02 **
	3	1.61	0.90	1.98 *	1.93
	2	1.23	1.69 *	2.02 *	1.13
	1	1.27	1.58 *	1.39 **	1.32
	0	**1.00**	**1.00**	**1.00**	**1.00**
Premarital child	1		1.09	1.20 *	1.44 *
	0		**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**	**1.00**
	towns	0.47 *	0.59 *	0.58 *	0.34 *
	rural	0.32 *	0.41 *	0.36 *	0.36 *

* significant at the 95 per cent level

** significant at the 90 per cent level

Tables 3 and 4 give similar bi-variate distributions for different marriage cohorts and different parities, respectively. The most interesting new patterns appear with respect to covariate education. The previously described U-shaped pattern pertains to parities 2 and 3+ and marriage cohorts before 1987. For more recent marriage cohorts (1987+) education no longer constitutes a risk factor for divorces of first marriages, while for parity 1 and to some degree for parity 0 education exhibits a trend of clearly decreasing risk with higher education. Also the risk associated with a pre-marital child becomes greater at higher parities. For parity 0 the covariate years in consensual union before marriage looses significance and in the case of the most recent marriage cohort (1987+) the divorce risk even decreases with having lived together prior to marriage, though not significantly. All other covariates: divorce of parents, age at marriage and urban/rural place of residence show the expected signs and remain strongly significant across marriage cohorts and parities as already discussed for Table 2.

V. Multi-variate Results

In the multi-variate setting (Tables 5 to 7) many of the patterns described before pertain while others change. In the following description of results we mostly focus on the interesting changes. As to the birth cohorts significant differences remain apparent, with increasing divorce risks for younger cohorts. Compared to the bi-variate model, differences decrease for the first period (<1986) and increase for the second period (1986-1995).

Divorce of parents remains a consistent and strong risk factor across all multi-variate models. None of the covariates seems to be able to capture this effect and it is also relatively independent of parity and marriage cohorts. A possible conclusion is that this risk factor is of a rather individual and psychological nature that is hardly affected by living conditions or structural factors. Interestingly, also in the multi-variate case the effect of this variable seems to have increased over time.

The pattern of educational effects does not change much under the multi-variate perspective, but it is no longer significant. Largely the U-shaped pattern persists with the exception of parities zero and one.

As to the effect of age at marriage a very interesting change in the pattern can be observed over the two periods. While in the earlier period (before 1986) the pattern clearly implies that the higher the age at marriage, the lower the divorce risk, for the second period the pattern is completely reversed (except for the extreme group that married before age 20). After 1986 a higher age at marriage implies a significantly higher divorce risk. This increase of risks with age at marriage is also visible in Table 7 for childless women. This significant structural change seems to deserve further analysis.

Table 5: Relative risk of divorce by period based on multi-variate Cox-regression models, women.

Covariate		Relative Divorce Risks by periods		
		<1986	**1986-1995**	**total**
Birth cohort	**-1949**	**1.00**	**1.00**	**1.00**
	1950-1959	1.57 *	5.18 *	1.61 *
	1960-1969	2.17 *		2.29 *
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**
	no	0.67 *	0.49 *	0.57 *
Education	tertiary	1.01	0.87	0.92
	upper secondary	0.84	0.91	0.87
	lower secondary	0.96	0.85	0.89
	basic	**1.00**	**1.00**	**1.00**
Age at marriage	29-35			0.95
	24-28			0.84
	20-23			**1.00**
	-19			1.78 *
Years in consensual union before marriage	4	1.45	1.26	1.20
	3	1.86 *	1.01	1.19
	2	1.37	1.73 *	1.44 *
	1	1.21 **	1.37 *	1.24 **
	0	**1.00**	**1.00**	**1.00**
Premarital child	1	1.46 *	1.45 *	1.45 *
	0	**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**
	towns	0.45 *	0.57 *	0.52 *
	rural	0.31 *	0.39 *	0.35 *

* significant at the 95 per cent level
** significant at the 90 per cent level

Table 6: Relative risk of divorce by marriage cohorts based on multi-variate Cox-regression models, women.

Covariate		Relative Divorce Risks by marriage cohorts		
		< 1974	**1975-1986**	**1987+**
Birth cohort	**-1949**	**1.00**	**1.00**	
	1950-1959	1.42 *	1.70	
	1960-1969		2.12 *	
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**
	no	0.60 *	0.50 *	0.60 *
Education	tertiary	1.04	0.72	1.26
	upper secondary	0.90	0.65 **	1.52
	lower secondary	0.83	0.79	1.44
	basic	**1.00**	**1.00**	**1.00**
Age at marriage	29-35	0.51	0.86	0.61
	24-28	1.06	0.66 *	0.66
	20-23	**1.00**	**1.00**	**1.00**
	-19	2.25 *	1.71 *	1.91 *
Years in consensual union before marriage	4	1.44	1.18	0.82
	3	2.83 *	1.01	0.58
	2	1.62 **	1.45 *	0.94
	1	1.08	1.32 **	1.00
	0	**1.00**	**1.00**	**1.00**
Premarital child	1	1.58 *	1.31 *	1.57 *
	0	**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**
	towns	0.45 *	0.55 *	0.67 *
	rural	0.37 *	0.35 *	0.32 *

* significant at the 95 per cent level
** significant at the 90 per cent level

Table 7: Relative risk of divorce by parity based on multi-variate Cox-regression models, women.

Covariate		Relative Divorce Risks by parity			
		parity 0	**parity 1**	**parity 2**	**parity 3+**
Birth cohort	**-1949**	**1.00**	**1.00**	**1.00**	**1.00**
	1950-1959	0.70	2.12 *	1.39 **	2.25 *
	1960-1969	1.30	3.27 *	1.86 *	4.12 *
	1970+	1.89	6.36 *	6.16 *	
Divorce of parents	**yes**	**1.00**	**1.00**	**1.00**	**1.00**
	no	0.59 *	0.64 *	0.55 *	0.75
Education	tertiary	0.79	0.75	0.95	1.29
	upper secondary	0.95	1.06	0.77	0.61
	lower secondary	1.09	0.87	0.92	0.60 *
	basic	**1.00**	**1.00**	**1.00**	**1.00**
Age at marriage	29-35		0.68	0.91	1.28
	24-28	1.10	0.75	0.82	1.10
	20-23	**1.00**	**1.00**	**1.00**	**1.00**
	-19	2.91 *	1.96 *	1.47 *	1.61 **
Years in consensual union before marriage	4	1.44	1.20	1.01	1.44
	3	1.14	0.89	1.48	1.44
	2	1.29	1.55 *	1.75 *	0.78
	1	1.18	1.40 **	1.14	0.91
	0	**1.00**	**1.00**	**1.00**	**1.00**
Premarital child	1		1.37 **	1.53 *	1.88 *
	0		**1.00**	**1.00**	**1.00**
Urban/rural	**large cities**	**1.00**	**1.00**	**1.00**	**1.00**
	towns	0.40 *	0.64 *	0.58 *	0.47 *
	rural	0.25 *	0.37 *	0.34 *	0.47 *

* significant at the 95 per cent level
** significant at the 90 per cent level

For the years in consensual union lived before marriage the pattern does not change significantly in the multi-variate case. The effect of a pre-marital child, however, becomes clearly more significant. Again, there seems to be some strong effect in the dynamics of the relationship of couples that becomes even more clearly visible if the effect of various structural factors is removed.

Finally, urban/rural differences remain as strong as ever and are consistent across all models.

VI. Discussion and Outlook

This study reveals some very interesting new patterns as to the covariates of divorce risk and especially the changing patterns from the bi-variate to the multi-variate perspective. The effect patterns for several time constant covariates are largely as expected: e.g. younger women, more recent marriage cohorts, women with age at marriage below 20 years, women who experienced a divorce of their parents, women living in large cities, and a pre-marital child are factors that increase the divorce risks of first marriages. In addition, those who had not lived in a consensual union before marriage and higher education lower the risk of a divorce on average. Across periods, marriage cohorts and parities, the significance and effect of these covariates seem to be relatively consistent with the most pronouncing exception being the level of education.

With increasing educational level the literature (see Blossfeld et al. 1995) frequently discusses two opposite forces: the selection effect and the liberation effect. The former states that increasing educational attainment and then marriage formation should selectively reduce the risk of a marriage dissolution. Economically this can be explained by reduced 'search costs' and higher efficiency of finding the most appropriate partner. In contrast, the liberation effect is not so much related to economic but to social factors. That is, given a certain prejudice of divorce, the higher educational level relieves the pressure from society against marital disruption.

The hypothesis of the liberation factor is supported by our findings in the parity-specific Cox regressions, but only for parity two onwards and for women with tertiary education. For other parities the liberation effect may be of less importance or counterbalanced by the selection effect. Moreover the educational impact on the divorce risk of first married women increases with parity. These results are in accordance with the study of Blossfeld et. al. (1995) who only concentrated on the marriage period after entry into motherhood, though the strength of the liberation effect is not that obvious in our data. On the other hand we observe that the explanatory power of education (in either direction) reduces with successive marriage cohorts suggesting that economic factors and/or social factors play a decreasing role in the decision to divorce.

As mentioned in the introduction, a necessary next step in this kind of analysis is to more systematically address the question of the role of age, age at marriage and duration. This can be done by the means of APC analysis with and without covariates as well as alternatively specifying Cox-models with different time-variant indexing variables.

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